Complete Summary

GUIDELINE TITLE

Polycystic ovary syndrome.

BIBLIOGRAPHIC SOURCE(S)

American College of Obstetricians and Gynecologists (ACOG). Polycystic ovary syndrome. Washington (DC): American College of Obstetricians and Gynecologists (ACOG); 2002 Dec. 14 p. (ACOG practice bulletin; no. 41). [101 references]

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Polycystic ovary syndrome (PCOS)

GUIDELINE CATEGORY

Diagnosis
Evaluation
Management
Prevention
Treatment

CLINICAL SPECIALTY

Dermatology
Endocrinology
Internal Medicine
Obstetrics and Gynecology

INTENDED USERS

Physicians

GUIDELINE OBJECTIVE(S)

- To examine the best available evidence on the diagnosis and clinical management of polycystic ovary syndrome (PCOS)
- To aid practitioners in making decisions about appropriate obstetric and gynecologic care

TARGET POPULATION

Women with polycystic ovary syndrome

INTERVENTIONS AND PRACTICES CONSIDERED

Diagnosis

1. History and physical examination, including the onset and duration of various signs of androgen excess; menstrual history; family history of diabetes and cardiovascular disease; life style factors; evaluation of blood pressure, body mass index, and waist-hip ratio; and presence of acne, hirsutism, androgenic alopecia, and acanthosis nigricans
2. Laboratory tests, including documentation of biochemical hyperandrogenemia (total testosterone and/or bioavailable or free testosterone); exclusion of other causes of hyperandrogenism, such as thyroid dysfunction, hyperprolactinemia, nonclassical congenital adrenal hyperplasia, and Cushing's syndrome; evaluation for metabolic abnormalities; and fasting lipid and lipoprotein level.
3. Optional tests to consider:
    - Ultrasound evaluation of ovaries
    - Gonadotropin determinations
    - Fasting insulin levels
    - 24-hour urine test

Management/Treatment

Anovulation and Amenorrhea

1. Combination oral contraceptives
2. Progestin, including medroxyprogesterone acetate
3. Insulin-sensitizing agents, including metformin, pioglitazone, and rosiglitazone

    Note: Troglitazone was removed from the market because of hepatotoxicity.

Ovulation Induction

1. Lifestyle modification
2. Clomiphene citrate
3. Clomiphene citrate and dexamethasone
4. Low-dose gonadotropins

5. Ovarian drilling with laser or diathermy (considered but not recommended)
6. Insulin-sensitizing agents, such as metformin and thiazolidinediones
7. Weight loss in obese women

Hirsutism

1. Oral contraceptives
2. Antiandrogens, including spironolactone, flutamide, and finasteride
3. Insulin-sensitizing agents
4. Eflornithine
5. Mechanical hair removal, such as shaving, plucking, waxing, depilatory creams, electrolysis, and laser vaporization

Prevention of Cardiovascular Disease and Diabetes

1. Combination oral contraceptives and progestins
2. Insulin-sensitizing agents

MAJOR OUTCOMES CONSIDERED

- Sensitivity and specificity of diagnostic tests
- Risk of developing type 2 diabetes and cardiovascular disease
- Ovulatory function
- Pregnancy rate after ovulation induction, including multiple pregnancy rate
- Hirsutism

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The MEDLINE database, the Cochrane Library, and the American College of Obstetricians and Gynecologists' (ACOG's) own internal resources and documents were used to conduct a literature search to locate relevant articles published between January 1985 and January 2001. The search was restricted to articles published in the English language. Priority was given to articles reporting results of original research, although review articles and commentaries also were consulted. Abstracts of research presented at symposia and scientific conferences were not considered adequate for inclusion in this document.

Guidelines published by organizations or institutions such as the National Institutes of Health and the American College of Obstetricians and Gynecologists were reviewed, and additional studies were located by reviewing bibliographies of identified articles.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Studies were reviewed and evaluated for quality according to the method outlined by the U.S. Preventive Services Task Force.

I Evidence obtained from at least one properly designed randomized controlled trial

II-1 Evidence obtained from well-designed controlled trials without randomization

II-2 Evidence obtained from well-designed cohort or case-control analytic studies, preferably from more than one center or research group

II-3 Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments also could be regarded as this type of evidence.

III Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Analysis of available evidence was given priority in formulating recommendations. When reliable research was not available, expert opinions from obstetrician-gynecologists were used. See also the "Rating Scheme for the Strength of Recommendations" field regarding Grade C recommendations.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Based on the highest level of evidence found in the data, recommendations are provided and graded according to the following categories:

Level A - Recommendations are based on good and consistent scientific evidence.

Level B - Recommendations are based on limited or inconsistent scientific evidence.

Level C - Recommendations are based primarily on consensus and expert opinion.

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Practice Bulletins are validated by two internal clinical review panels composed of practicing obstetrician-gynecologists generalists and sub-specialists. The final guidelines are also reviewed and approved by the American College of Obstetricians and Gynecologists (ACOG) Executive Board.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The grades of evidence (I-III) and levels of recommendations (A-C) are defined at the end of the "Major Recommendations".

The following recommendations are based on good and consistent scientific evidence (Level A):

- All women with polycystic ovary syndrome (PCOS) should be screened for glucose intolerance with a 2-hour glucose level after a 75-g fasting glucose challenge.
- All women with PCOS should be screened for dyslipidemia with a fasting lipoprotein profile, including total cholesterol, low-density lipoprotein (LDL) cholesterol, high-density lipoprotein (HDL) cholesterol, and triglyceride determinations.
- Interventions that improve insulin sensitivity, including weight loss, use of metformin, and use of thiazolidinediones, are useful in improving ovulatory frequency in women with PCOS.

- Use of clomiphene citrate is appropriate because it effectively results in pregnancy in women with PCOS.

The following recommendations are based on limited or inconsistent scientific evidence (Level B):

- Improvements in insulin sensitivity, by weight loss or by the use of insulin-sensitizing agents, may favorably improve many risk factors for diabetes and cardiovascular disease in women with PCOS.
- When using gonadotropins to induce ovulation, low-dose therapy is recommended because it offers a high rate of monofollicular development and a significantly lower risk of ovarian hyperstimulation in women with PCOS.
- The benefit and role of surgical therapy in ovulation induction in women with PCOS is uncertain.

The following recommendations are based primarily on consensus and expert opinion (Level C):

- Although eflornithine hydrochloride cream has been effective in treating facial hirsutism in women, additional benefits or risks for women with PCOS are unknown.
- All women with a suspected diagnosis of PCOS should be screened with a 17-hydroxyprogesterone value for nonclassical congenital adrenal hyperplasia.
- Combining medical interventions may be the most effective way to treat hirsutism. Combined therapy with an ovarian suppression agent and an antiandrogen appears effective in treating hirsutism in women with PCOS. The best pill or antiandrogen is unknown.
- The ideal choice of ablative procedures for long-term management of hirsutism in women with PCOS is unknown.
- The optimal progestin, duration, and frequency of treatment to prevent endometrial cancer in women with PCOS is unknown.
- The effects of insulin-sensitizing agents on early pregnancy are unknown; metformin appears safe, but any additional effect at reducing pregnancy loss is uncertain.
- The best or initial treatment for hirsutism, ovulation induction, or prevention of long-term metabolic sequelae for women with PCOS is unknown. All of these conditions may benefit from lifestyle modification as initial treatment.

Definitions:

Grades of Evidence

I Evidence obtained from at least one properly designed randomized controlled trial

II-1 Evidence obtained from well-designed controlled trials without randomization

II-2 Evidence obtained from well-designed cohort or case-control analytic studies, preferably from more than one center or research group

II-3 Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments also could be regarded as this type of evidence.

III Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees

Levels of Recommendations

Level A - Recommendations are based on good and consistent scientific evidence.

Level B - Recommendations are based on limited or inconsistent scientific evidence.

Level C - Recommendations are based primarily on consensus and expert opinion.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for each recommendation (see "Major Recommendations").

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Appropriate diagnosis and treatment of polycystic ovary syndrome

POTENTIAL HARMS

Side Effects of Medication

- Progestins. Use of medroxyprogesterone acetate is associated with decreases in sex hormone binding globulin (SHBG). Progestin-only oral contraceptives are associated with high incidence of breakthrough bleeding.
- Clomiphene citrate. Use of clomiphene citrate can result in ovarian hyperstimulation syndrome.
- Insulin-sensitizing agents. The most common adverse reactions of metformin are gastrointestinal symptoms (diarrhea, nausea, vomiting, abdominal bloating, flatulence, and anorexia). Metformin is also associated with a small risk of lactic acidosis. Troglitazone had been associated with an increased risk of hepatotoxicity and was removed from the market. Newer thiazolidinediones have been associated with embryotoxicity in animal studies.

- Antiandrogens. All antiandrogens are teratogenic and pose a risk of feminization of the external genitalia in a male fetus if the patient conceives. Spironolactone can cause and exacerbate hyperkalemia; therefore, it should be used cautiously in women with renal impairment. The most common side effect of flutamide is dry skin, but its use has been associated with hepatitis in rare cases. Only minimal hepatic and renal toxicity is associated with finasteride.
- Eflornithine. A variety of adverse skin conditions have been reported in a small percentage of patients.
- Cosmetic management of hirsutism. Plucking can cause folliculitis, pigmentation, and scarring. Electrolysis is tedious, its success is highly operator-dependent, and it may be impractical for treating large numbers of hairs. Laser treatment is also operator-dependent and multiple treatments may be necessary.

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

These guidelines should not be construed as dictating an exclusive course of treatment or procedure. Variations in practice may be warranted based on the needs of the individual patient, resources, and limitations unique to the institution or type of practice.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Staying Healthy

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

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ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2002 Dec

GUIDELINE DEVELOPER(S)

American College of Obstetricians and Gynecologists - Medical Specialty Society

SOURCE(S) OF FUNDING

American College of Obstetricians and Gynecologists (ACOG)

GUIDELINE COMMITTEE

American College of Obstetricians and Gynecologists (ACOG) Committee on Practice Bulletins-Gynecology

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Not stated

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Not available at this time.

Print copies: Available for purchase from the American College of Obstetricians and Gynecologists (ACOG) Distribution Center, PO Box 4500, Kearneysville, WV 25430-4500; telephone, 800-762-2264, ext. 192; e-mail: sales@acog.org. The ACOG Bookstore is available online at the ACOG Web site.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on February 4, 2004. The information was verified by the guideline developer on July 26, 2004.

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Date Modified: 11/8/2004